

BUSTANG MOUNTAIN CORRIDOR SHUTTLE WHITE PAPER April 2021

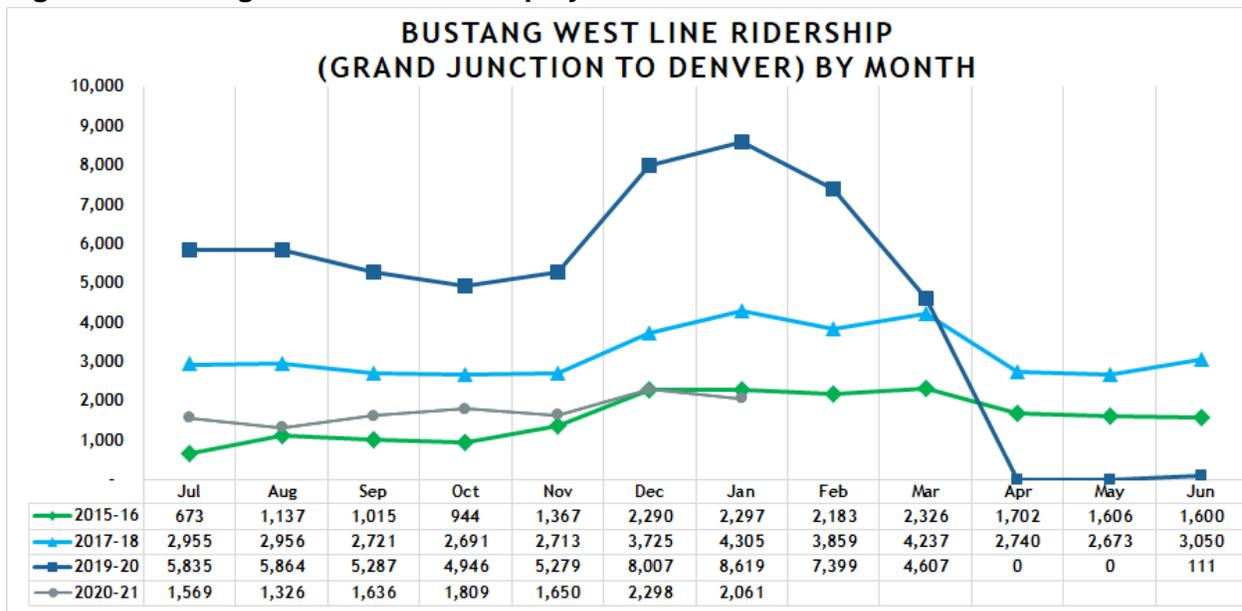
Purpose

This white paper presents the staff proposal to the Transportation Commission for the Bustang Mountain Corridor Shuttle Service Plan (the Plan). The Plan incorporates input from the I-70 Coalition TDM Committee, The I-70 Collaborative Effort, and the Transit & Rail Micro-Transit Advisory Sub-Committee. If the Transportation Commission concurs, the Division of Transit and Rail (DTR) will request approval to implement the Plan at the April Commission meeting.

Background

The Bustang West Line originally was intended to focus on "essential travel" trip purposes like business, shopping, medical, air travel, and others for the residents in the mountain communities along and near the I-70 Mountain Corridor. Recreational trips for skiing and snowboarding were not the primary purpose of Bustang. As demand increased and riders with recreational trip purposes increasingly used the service, bus trips were added to the operations plan. In calendar year 2019, Bustang West Line handled 70,611 riders, averaging 193 riders per day; 3 daily round trips had 306 available seats. Service has increased from one daily roundtrip per day in 2015 to three daily roundtrips in early 2020 pre-pandemic. Figure 1 shows the Bustang West Line ridership from 2015-2021.

Figure 1: Bustang West Line Ridership by Month



Even with added trips, demand has outstripped the capacity of the service, leaving riders stranded. These situations have proven difficult to manage and resulted in customer dissatisfaction. The root causes of the problem are lack of fleet availability and continuing shortages of qualified operators with a Commercial Driver's License (CDL). Between October 2018 and May 2019, Ace Express Coaches, LLC (the contracting agency operating Bustang West Line) experienced a CDL driver shortage. Currently, the State of Colorado regulations require CDL certification for operators of vehicles that transport 16 or more passengers, including the driver.¹ To obtain CDL certification, drivers must meet a strict set of requirements that include passing the commercial drive skills test, medical examination, randomized drug testing, additional fees, etc. This limits the pool of qualified drivers. Private companies with CDL job positions pay above the average rate for passenger vehicle bus driver positions, which means the limited numbers of qualified drivers are choosing those positions over the Bustang-contracted positions. The shortage of drivers resulted in the denial of service of over 300 passengers and reduction of daily trips from 34 to 30.

Once the pandemic restrictions are lifted, DTR staff expects an increased demand for I-70 Mountain Corridor transit service, building back to pre-pandemic levels, and growing beyond in the future. This will put even more stress on the Bustang West Line operations. The proposed flexible, frequent and fair-priced shuttle service described in this white paper would provide the added capacity to meet this growing demand.

Bustang Mountain Corridor Shuttle Purpose & Goals

The CDOT mission statement is "to provide the best multi-modal transportation system for Colorado that most effectively moves people, goods, and information." The I-70 Coalition Transportation Demand Management (TDM) committee has established that I-70 is 300-400 vehicles per hour over capacity during peak periods between Vail and Denver, and is exploring solutions to correspondingly reduce private automobile demand by that amount. The Plan supports the CDOT mission statement and the TDM Committee goal by operating frequent, reliable, and affordable peak period public transit, supplementing the existing Bustang West Line and Snowstang service between Avon/Vail and Denver, more than doubling the daily available seats on peak traffic days.

The purpose of The Bustang Mountain Corridor Shuttle Service is to:

- Operate frequent, reliable, affordable peak period I-70 public transit
- Reduce reliance on private automobiles
- Reduce greenhouse gas emissions

Goals

The plan starts off small, allowing for managed expansion based on demand and funding availability, similar to how the Bustang expansion was implemented between 2015 and early 2020. This service expansion is shovel-ready and conforms with the Governor's stated goals of reducing traffic and improving air quality.² This proposed service has an aggressive timeline with a target launch date in December 2021. Plan goals include:

- Proof of Concept

¹ <https://dmv.colorado.gov/cdl-general-information>

² <https://energyoffice.colorado.gov/climate-energy/ghg-pollution-reduction-roadmap>

- Start small and grow as service matures - more frequent
- Demonstrate ridership for future Mass Transit
- Reduce traffic & GHG Emissions
- Maintain a sustainable operation
 - Plan for 40% farebox recovery but maintain at least 20% farebox recovery by mid 2022
 - Operate strict reservation only fixed-route station to station to keep operating costs low
 - Collaborate with Mountain Resort Shuttles
- Increase person-trip capacity on the corridor
 - More than doubles the seating capacity on peak traffic days to 744 seats per day
- Responsive to public desire for service

The Bustang Mountain Corridor Shuttle Plan proposes to use a fleet of passenger vans. Because the proposed vehicles are smaller than the standard Bustang over-the-road coaches, the service will be allowed to operate in the I-70 Mountain Express Lanes (MEXL) through Clear Creek County, avoiding traffic congestion in the general purpose lanes in the east- and west-bound directions, as well as on the potential bus-on-shoulder stretch on Floyd Hill. These smaller vehicles also will eliminate the need for CDL certification, making it easier to find drivers and maintain a better level of service for the public. Finally, the vehicles require lower-cost liability insurance and less costly maintenance compared to over-the-road coaches and buses. Figure 2 shows examples of existing passenger van shuttles, including OC Flex through Orange County Transportation Authority (OCTA) in California and Ride 2 through King County Metro in Washington State.

Figure 2: Example Passenger Van Shuttles



The new service will provide more frequent service than the existing Bustang West Line, to allow riders flexibility in travel times. Adding vehicles to the fleet on the corridor also allows the operator to adjust schedules and routes as needed. Like the existing Bustang West Line, the service will capitalize on local public transit systems that connect to local transit routes. The shuttle service will continue to use a public transit type fare structure, which is a more affordable alternative than existing private charter services.

The service can demonstrate ridership and demand for a future Advanced Mass Transit³ along the I-70 Mountain Corridor. The draft initial operating plan is to provide the service on peak traffic days including Fridays, Saturdays, Sundays, and holidays on a strict reservation basis. The service will more than double the seating

³ <https://www.codot.gov/programs/transitandrail/plans-studies-reports/ags-study.url>

capacity on peak traffic. Operating costs will be kept low with a fixed-route station-to-station service model and using existing Bustang West Line stops.

Potential benefits include reducing reliance on private automobiles, reducing traffic congestion along the I-70 Mountain Corridor, and reducing greenhouse gas emissions. This service also helps to meet the increased demand Bustang has experienced since its inception in 2015 and alleviates the worsening traffic conditions experienced by travelers along the I-70 Mountain Corridor. Finalization of the branding and livery for this service will occur late spring 2021.

Stakeholder & Advisory Committee

Stakeholder outreach has begun and will continue in the Spring and Summer of 2021. Outreach includes existing private operators and other necessary stakeholders in the region, such as the I-70 Coalition and other transit management organizations/associations (TMO/TMA). Additionally, partnership with corridor municipalities, counties, and other key agencies are vital to the success of this service. DTR staff prepared the service implementation plan in conjunction with the COVID-19 Bustang Recovery Plan with guidance and assistance from the following groups:

- The I-70 Coalition - TDM Committee
- The I-70 Collaborative Effort
- The newly created Transit and Rail Mountain Corridor Shuttle Advisory Sub-Committee

Pending Transportation Commission approval, DTR staff will continue to meet with the aforementioned groups and conduct outreach to existing shuttle services in the corridor. Mountain shuttle carriers like Epic Mountain Express (formerly Colorado Mountain Express) and Summit Express offer critical surface transportation services to tourists and travelers from Denver International Airport to mountain tourist locations under a charter model via reservation. The Mountain Corridor Shuttle service will collaborate with but not compete with these operators because it is targeting residents along the corridor, with pick-up and drop-off at existing transit stations. Table 1 shows a list of current stakeholders engaged in the Mountain Corridor Shuttle plan development.

Table 1: Mountain Corridor Shuttle Stakeholders

I-70 Coalition - TDM Committee	Town of Silverthorne	Summit Stage
I-70 Collaboration Effort	Town of Avon	ECO Transit
Transit and Rail Micro-Transit Advisory Sub-Committee	Town of Frisco	RTD
Clear Creek County	Town of Vail	DRCOG
Summit County	Town of Eagle	Ski Resorts
Eagle County	Town of Idaho Springs	Private Shuttle Operators

Inter-Mountain TPR		
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Proposed Fleet

Under the Plan, CDOT would be the operating entity, purchase the rolling stock, and amend the contract with Ace Express Coaches, LLC, who has extensive experience with frequent, small vehicle fixed-route transit. The Plan proposes the purchase of 12 vans configured to accommodate 14 passengers plus a driver. The shuttle fleet would be owned by CDOT and leased to Ace Express Coaches, following the existing ownership model used for Bustang and Bustang Outrider. Peak seat availability along the corridor would increase from the current 306 seats to 744 seats daily during shuttle service days. The 12 vans provide 84 seats compared to 51 seats in one over-the-road coach.⁴

The acquisition cost of five vans of this type equals the cost of one full-size over-the-road motor coach. Typical passenger vans that fit the desired specifications cost \$54,000 per vehicle. Customization and technology upgrades cost \$40,000 and \$9,000, respectively, per vehicle.

Table 2: Estimated Mountain Corridor Shuttle Capital Costs

Estimated Costs	Unit Cost	Quantity	Total
Passenger Vans	\$54,000	12	\$648,000
Customization	\$40,000	12	\$480,000
Wifi, INIT CAD-AVL, etc.	\$9,000	12	\$108,000
Total			\$1,236,000

Because the passenger vehicles that meet the specifications are less than 25 feet long and will not be towing a trailer, they are permitted to travel in the I-70 Mountain Express Lanes (MEXL). Additionally, state ordinance C.R.S. 43-4-808(1)(b)⁵ permits public transit vehicles to travel in the Express Lanes without paying a user fee. There are no electric vehicles on the market that meet the specifications, so they will have either clean turbo diesel or eco gasoline engines. The costs of liability insurance and maintenance are lower for passenger vans than over-the-road motor coaches and average 15-20 miles per gallon of fuel compared to the 5 miles per gallon of a 45-foot coach.⁶ This equates to better per passenger miles per gallon compared to the standard SUV, which can hold up to five passengers and can average between 13-30 miles per gallon.⁷

⁴ https://www.codot.gov/programs/commuterchoices/assets/documents/trandir_transit.pdf

⁵ <https://leg.colorado.gov/sites/default/files/images/olls/crs2016-title-43.pdf>

⁶ <https://afdc.energy.gov/data/10310>

⁷ https://www.fueleconomy.gov/feg/byclass/Standard_SUV_4WD2019.shtml

To procure the vehicles, a bid process will need to take place. In all, start-up capital costs would total about \$1.24 million.

Proposed Shuttle Service Schedule

The proposed service will augment the current Bustang and Snowstang Service during peak traffic on Fridays, Saturdays, Sundays, and holidays during the winter recreation season and summer tourism season. The service would operate 12 round trips during peak traffic days, coordinated within the Bustang service, featuring 60-minute headways from 12:00 PM - 9:00 PM on Fridays, and 5:30 AM - 9:00 PM Saturdays, Sundays, and holidays. It would operate daily during the December-January holiday period. The addition of the Mountain Corridor Shuttle service would raise the total number of seats offered to patrons to 744 seats on peak traffic days.

Service would originate/terminate at the Avon Station on Benchmark Road and Denver Union Station, with stops at the Vail Transportation Center, Frisco Transfer Station, and Denver Federal Center RTD Light Rail Station. Service frequency would be increased 4-fold, providing greater travel choices than what is currently offered for the Bustang West Line service.⁸ Ongoing conversations with stakeholders include exploring a potential extension to the Town of Eagle (existing Bustang West Line stop). Accessible vehicles would be on call for any patron who needs wheelchair-accessibility. An option to request an accessible vehicle would be available when purchasing tickets in order to accommodate passengers. Figure 3 shows an example schedule.

⁸ <https://ridebustang.com/west-line-schedule/>

Figure 3: Proposed Shuttle Schedule

Westbound - Read Left to Right

Run Number	Denver Union Station	Vail/Avon	Glenwood Springs	Grand Junction
Micro-Transit 770	6:00 AM	8:30 AM		
Bustang 710	7:00 AM	→	10:55 AM	12:40 PM
Micro-Transit 772	8:00 AM	10:30 AM		
Micro-Transit 774	9:00 AM	11:30 AM		
Bustang 712	10:00 AM	→	1:55 PM	3:40 PM
Micro-Transit 776	11:00 AM	1:30 PM		
Micro-Transit 778	12:00 PM	2:30 PM		
Micro-Transit 780	1:15 PM	3:45 PM		
Micro-Transit 782	2:00 PM	4:30 PM		
Bustang 730	3:00 PM	5:40 PM		
Outrider 6601	3:15 PM	→	Craig	
Micro-Transit 784	3:30 PM	6:00 PM		
Micro-Transit 786	5:00 PM	7:30 PM		
Bustang 711	5:40 PM	→	9:35 PM	
Micro-Transit 788	7:00 PM	9:30 PM		
Micro-Transit 790	8:00 PM	10:30 PM		
Micro-Transit 792	9:15 PM	11:45 PM		

Eastbound - Read Left to Right

Run Number	Grand Junction	Glenwood Springs	Avon/Vail	DJS
Micro-Transit 771			5:15 AM	7:30 AM
Bustang 731			6:10 AM	9:05 AM
Micro-Transit 773			7:30 AM	9:45 AM
Bustang 701		7:25 AM	8:25 AM	10:10 AM
Outrider 6602		Craig	→	11:20 AM
Micro-Transit 775			9:30 AM	11:45 AM
Micro-Transit 777			10:30 AM	12:45 PM
Micro-Transit 779			11:30 AM	1:45 PM
Micro-Transit 781			12:30 PM	2:45 PM
Micro-Transit 783			1:30 PM	3:45 PM
Micro-Transit 785			2:30 PM	4:45 PM
Bustang 711	12:25 PM	2:25 PM	3:45 PM	6:00 PM
Micro-Transit 787			4:45 PM	7:00 PM
Micro-Transit 789			5:30 PM	7:45 PM
Micro-Transit 791			6:30 PM	8:45 PM
Bustang 713	4:30 PM	6:20 PM	7:40 PM	9:55 PM
Micro-Transit 793			8:30 PM	10:45 PM

Proposed Fare Structure

Proposed transit fares for the shuttle service are based on \$0.20 per mile. Required reservations, using the BETTEREZ Reservation System, would guarantee seats on shuttle routes only, and would be transferable to the Bustang West Line; however, no reservations would be guaranteed. This fare structure is slightly higher than the existing Bustang fare structure of \$0.17 per mile, justified by guaranteed seats and potentially faster travel times. Discount fares could be offered to riders who purchase multiple fares and to seniors, disabled patrons, and children. Table 3 outlines the example fares and potential discounts for The Mountain Corridor Shuttle.

Table 3: Potential Fares and Discounts

Example Fares	
Denver to Avon/Vail	\$20.00
Denver to Frisco	\$14.00
Frisco to Avon/Vail	\$5.00
Type of Fares	Discount
10 Ride Discount	10%
20 Ride Discount	20%
40 Ride Discount	25%
Senior Discount (65+)	25%
Disabled Discount	25%
Child Discount (2-11 y/o)	50%

Operations & Maintenance Costs

Operations and maintenance costs for the service are estimated to be between \$2.40-\$2.75 per mile, compared to the existing Bustang cost per mile of \$4.35. Annual operating days are projected at 136 days, for an estimated gross annual operating cost between \$1.25-\$1.61 million. Fuel costs for passenger vans getting 15-20 miles per gallon traveling 464,800 annual operating miles and fuel economy prices are estimated to be between \$2.50-\$4.00 per gallon. Operation is expected to receive a minimum farebox recovery of 20%, making the net annual operating costs between \$1-\$1.23 million.

Drivers would be recruited equally from the mountain corridor communities and Front Range. Using the existing model for Bustang West Line, drivers would make three trips during a work shift and therefore receive paid overnight accommodation every other shift (an estimated 544 hotel nights). This would account for any inclement weather drivers may experience and keep them well within their federally regulated shift time allotment. Table 4 shows the annual operating costs.

Table 4: Estimated Mountain Corridor Shuttle Annual Operating Costs

Estimated Costs	High	Low
Operating Miles	\$1.2M	\$1.12M
Fuel	\$0.19M	\$0.06M
Hotel	\$0.14M	\$0.07M
Gross Operating Cost	\$1.61M	\$1.25M
Minus Farebox Recovery 20%	-\$0.32M	-\$0.25M
Total	\$1.23M	\$1.00M

Communications Plan

A permanent service name and livery has been assigned to the Bustang and Outrider Marketing firm, Amelie Company to be delivered in late spring 2021. An announcement will be released to the public after Transportation Commission approval. Additional announcements and advertising will include social media, including Facebook, Twitter, and Instagram; paid advertising; traditional media outlets such as local Denver news channels, TV8 in Summit County, Vail Valley TV 8 (Vail Resorts); and the Summit Daily, Vail Daily, Colorado Sun, and Denver Post newspapers.

Conclusion

The Bustang Mountain Corridor Shuttle Service Plan proposes a short, expedited implementation timeline to begin to service the needs of residents and travelers along the I-70 Mountain Corridor as soon as the 2021 winter season. This new service is backed by the success of Bustang West Line ridership over the past five years and responds to the public’s desire for expanded mountain corridor public transportation options. It will reduce I-70 Mountain Corridor traffic and greenhouse gas emissions in support of the State of Colorado Governor’s climate action goals.

Associated risks with this new service may include the expedited bidding, procuring, and preparation of the vehicles by the proposed December 2021 launch date. Staff will continue to work with Ace Express to ensure they have the bandwidth to maintain 12 additional vehicles, including the option to contract out vehicle maintenance depending on their capacity limitations. Additionally, drivers will need to be recruited for the additional vehicles and trips. Review of state and federal regulations will be necessary to determine if they prohibit a reservation-only service for public transit. Continued research and verification that the bus-on-shoulder operations on Floyd Hill is viable to ensure reliable transit service in this corridor.

Previous Transportation Commission resolutions related to Bustang include TC Resolution #TC-3133 in January 2014, which gave the provision to monitor Bustang’s success for the first three years of operation. It established CDOT’s authority to continue service, modify, or cancel Bustang operations.

PD1605.1 was approved in August 2014 and established reporting procedures to the Transportation Commission for Bustang operations:

GENERAL PROVISIONS - Paragraph 3 - "DTR shall set targets for farebox recovery with the goal of attracting ridership and providing an alternative to driving that entices riders to reduce driving. The Program shall thus set a goal of achieving a minimum fare box recovery of 20% of operating costs within two years of service start up."

Transportation Commission approval is necessary to implement the Bustang Mountain Corridor Shuttle Implementation Plan, with \$1 million in operations and maintenance costs and \$1.3 million in start-up capital costs. If Transportation Commission approval is granted in mid-April 2021, next steps are to procure the fleet in late April, finalize the brand name and vehicle livery mid-May, and conduct stakeholder outreach May through July. The expected service launch is December 2021.